ALL-in-SMALL™

A Next-Generation Unified Suite for Airborne EW Self-Protection

Elbit Systems™
ISTAR & EW - Elisra

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Overview

In today's heightened multi-spectral threat environment, missions of increasing complexity demand constant combat readiness, modularity, commonality and coherency.
Answering this critical challenge, ALL-in-SMALL is the preferred Self-Protection Suite for all airborne platforms types. Merging in a single LRU - the benefits of both high-end technological capabilities and proven operational experience of the SPS-65V-5 and PAWS Family systems - ALL-in-SMALL delivers superior performance, enhanced platform survivability and mission success.

Leveraging its advanced capabilities – including Drone Threat Detection, IR-CENTRIC™, ESM and multi-spectral emitter geo-location – ALL-in-SMALL supports mission execution by providing precise sensor-to-shooter information as well as enhancing situational awareness with an additional advanced capability – Personal Locator Beacon (PLB) Detection.

ALL-in-SMALL's exceptional combination of unique technologies, modularity, open architecture and Multi-Level Redundancy (MLR) design and growth capabilities, provides operational solutions and best value for all airborne platform types (fighters, helicopters, mission aircraft, transporters, etc.).

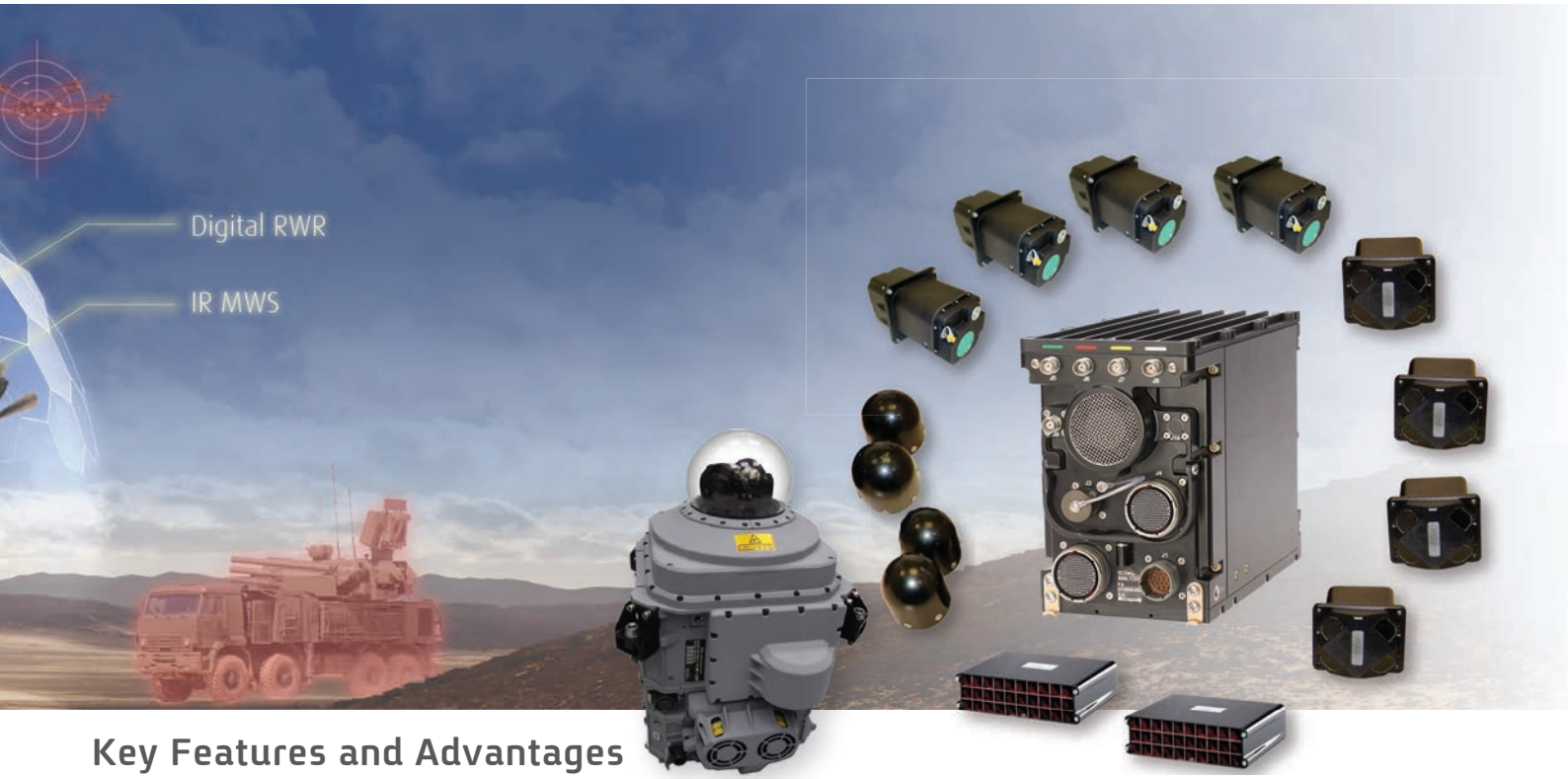
Main Capabilities

EW Functions:

- EWC - EW Suite Controller
- RWR - Advanced Digital Radar Warning Receiver
- IR MWS - Infrared (IR) Missile Warning System
- LWS - Laser Warning System
- CFDS - Chaff/Flare Dispensing System
- AHFI - Advanced Hostile Fire Indication
- Integrated with Directional Infrared Countermeasures (DIRCM)
- Integrated with ECM jammer

Advanced Growth Capabilities:

- Drone Threats Detection
- Personal Locator Beacon Detection
- Multi-Spectral Threat Geo-Location
- IR-CENTRIC™
- ESM
- Net-Centric EW applications



Key Features and Advantages

EWC - EW Suite Controller

- Human Machine Interface (HMI) management:
  - MFCD or dedicated color display
  - Voice & tone warning
- Weapon system threat data fusion (RWR, LWS, MWS)
- Multi-arena User Data Files (UDF)
- Interoperability management (embedded blanking center)
- In-flight suite record management
- Provision for network-centric operation

RWR - Advanced Digital Radar Warning Receivers

- Advanced wide band and narrow band digital receivers
- Full band coverage (low band to 18 GHz, optional mmW)
- Modern radar threat handling (pulse, CW, high PRF, low ERP)
- Drone & PLB detection
- ESM capabilities
- High sensitivity
- Accurate Direction Finding (DF) of received signals and Geo-location
- Dense arena handling

IR MWS - IR Missile Warning System

- Passive detection in the IR spectrum
- Long detection range, fast reaction time and very low False Alarm Rate (FAR) at all altitudes, terrain and flight conditions
- Multiple and simultaneous threat detection, tracking and close threat separation
- High resolution & DF accuracy
- Effective against threatening missiles and other hostile fire sources
- IR-CENTRIC capabilities
- Automatic activation of laser DIRCM

LWS - Laser Warning System

- Multi-band coverage (bands I, II, III, optional IV)
- Modern threat handling :
  - Laser Beam Rider (LBR)
  - Laser Range Finder (LRF)
  - Laser Target Designator (LTD)
- High-sensitivity (for LBR)

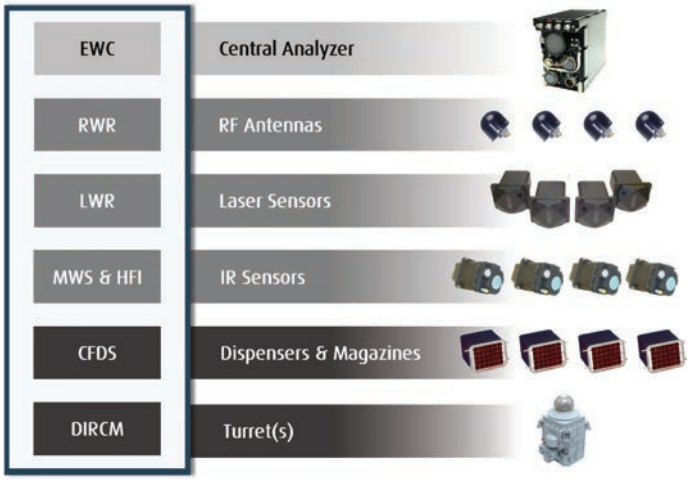
CFDS - Chaff/Flare Dispensing System

- Modes of operation: standby, manual, semi-automatic, automatic
- Interface to RWR and MWS for automatic / semi-automatic dispensing

AHFI - Advanced Hostile Fire Indication

- Automatic detection, classification and warning of hostile fire

Open Architecture "Plug and Play"



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Summary of Key Strengths

- High operational performance and advanced capabilities
- Unified system - one central processing LRU
- Low Size, Weight and Power (SWaP)
- Modular and open architecture
- Multi-platform commonality (hardware & software)
- Future growth capability
- Reduced Life Cycle Cost (LCC)

Technical Specifications

• Audio	Voice messages and audio tone alerts
• Display	MFCD / Dedicated Color Display Unit
• Interfaces	1553B Mux Bus (x4), ARINC 429 (x4), RS422 (x10) RS232 (x2) LAN (x4) Blanking Center (In/Out blanking) Discrete I/Os
• Voltage Supply	28 Vdc (MIL-STD-704)
• Environmental Conditions	MIL-HDBK-5400, Class II qualified

Physical Characteristics

Component	Weight (kg)	Length (mm)	Width (mm)	Height (mm)	Power Dissipation (W)
Analyzer	9	221	124	194	300
Spiral Antennas (4)	0.2	73	67 ø	67 ø	-
Laser Sensors (4-6)	1.0	127	110	88	15 +14 for heater
IR Sensors (3-6)	3.4	260	145	145	45
Dispensers (2-24)	2.8	216	170	252	3
Safety Switch Unit	0.7	118	65	11	-

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